

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Horst HILD

Appln. No.:

Filed: March 22, 2002

For: A PUNCHING AND BINDING MACHINE

Attorney Docket No.: 3827.095

PRELIMINARY AMENDMENT

Box: PCT  
Honorable Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

Sir:

Prior to examination of the above-identified application,  
please amend the application as follows:

IN THE CLAIMS (CLEAN VERSION):

Please cancel Claims 1-29 in favor of the following new  
Claims 30-58:

30. A punching and binding machine for a stack of sheets,  
comprising
- a punching mechanism which includes an insertion gap  
limited on one side by a punch matrix, with adjustable  
lateral limit stops and optionally with adjustable depth  
stop, for the sheets of the stack of sheets to be provided  
with a row of binding holes near one edge, and which  
includes a number of punch blades arranged in defined  
separation from each other along the insertion gap and  
moveable via an actuating mechanism perpendicularly through

the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

further comprising an adjustment means (76, 78) for simultaneously operating an adjustment mechanism (68, 70, 72, 74) for the lateral limit stop (66) and a coupling mechanism (88, 92, 94, 96, 98, 100) for the selectable blades (54).

31. A punching and binding machine according to Claim 30, wherein the adjustment means (76, 78) includes multiple adjustment positions, optionally defined by a scale (103) and/or detent positions, with predetermined association of the lateral limit stop (66) and the coupling/decoupling condition of the selectable blades (54).
32. A punching and binding machine according to Claim 30, wherein the adjusting mechanism for the lateral limit stop (66) includes a ram (68) slideable in the longitudinal direction of the insertion gap (12) and carrying on one end the lateral limit stop (66), and adjustable via the adjustment means (76, 78).

33. A punching and binding machine according to Claim 32, wherein the adjustment means is a rotation knob (76) coupled with a curve wheel (74), which exhibits an adjustment curve (72) for receiving a slide-block (70) fixed to the ram.
34. A punching and binding machine according to Claim 31, wherein the adjustment means (76, 78) includes a calibration or adjusting element (78) for the fine adjustment of the lateral limit stop (66) in any adjustment position.
35. A punching and binding machine according to Claim 34, wherein the curve wheel (74) is connected with the rotation knob (76) fixed against rotation and axially displaceable, and that the calibration means (78) is limitedly rotatable relative to the rotation knob and engages via a slide-block (74) in a preferably screw shaped fine adjustment curve (76) of the curve wheel (74).
36. A punching and binding machine according to Claim 35, wherein the curve wheel (74) includes at least two, preferably three, equal, angularly spaced apart from each other, fine adjustment curves (86) for receiving a corresponding number of slide-blocks (84) provided on the adjustment means (78) in angular separation from each other.
37. A punching and binding machine according to Claim 30, wherein the coupling mechanism for the selectable blades (54) includes a camshaft (88) coupled fixed against rotation with the adjusting means in the form of the rotation knob (76) with respectively one cam curve associated with each of the individual selectable blades (54) as well as

respectively one locking means (96) radially adjustable via the associated cam curve (92).

38. A punching and binding machine according to Claim 37, wherein the punching blades (46) inclusive of the selectable blades (54) are provided on a blade shaft (28) concentric to the camshaft (88) and respectively exhibit one punch part spaced radially apart from the outer surface of the blade shaft (28) and curved coaxially thereto, so that by rotation of the blade shaft (28) the punch operation can be carried out.
39. A punching and binding machine according to Claim 38, wherein the selectable blades (54) and the blade shaft (28) are axially not displaceable relative to each other and are rotatable relative to each other about a common rotation axis (54) and that the locking means (96) extends through a radial through hole (94) in the blade shaft (28), wherein in the locking position the locking means engages under the influence of the cam curve (92) in a radial borehole (100) of the selectable blade (54), which borehole is opened radially inwardly towards the blade shaft (28), and in the disengaged position is extracted from the radial borehole (100) of the selectable blade in the direction of the blade shaft (28).
40. A punching and binding machine according to Claim 39, wherein the locking means (96) is urged in the direction of the camshaft (88) by the influence of a spring (98) supported in the selectable blade (54).

41. A punching and binding machine according to Claim 38, wherein the blade shaft (28) is connected fixed against rotation with an operating lever (30).
42. A punching and binding machine according to Claim 38, wherein the blade shaft (28) is motor driven.
43. A punching and binding machine according to Claim 30, further including a measuring device (26) for determining the thickness of the stack of sheets to be bound as well as with a device coupled to the measuring device (24) for adjusting the border limit stops (34) of the binding mechanism (16) depending upon the dimensions of the measured sheet stack thickness.
44. A punching and binding machine for a stack of sheets, comprising
- a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with and optionally with adjustable lateral limit stops and adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and
- a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies

for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

further comprising a measuring device (26) for determining the thickness of the stack of sheets to be bound as well as with a device coupled to the measuring device (24) for adjusting the border limit stops (34) of the binding mechanism (16) depending upon the dimensions of the measured sheet stack thickness.

45. A punching and binding machine according to Claim 43, further including a device coupled with the measuring device for adjusting the depth limit stop (112) in the insertion gap (12) of the punching mechanism (10) according to the dimension of the measured sheet stack thickness.
46. A punching and binding machine for a stack of sheets, comprising
- a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with and optionally with adjustable lateral limit stops and adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

and further comprising a measuring device (26) for determining the thickness of the stack of sheets to be bound as well as with a device coupled to the measuring device (24) for adjusting the border limit stops (34) of the binding mechanism (16) depending upon the dimensions of the measured sheet stack thickness.

47. A punching and binding machine according to Claim 42, wherein an adjusting device (116) coupled with the measuring device (24) for displaying the selected binder spine size according to the measurement of the measured sheet stack thickness.

48. A punching and binding machine for a stack of sheets, comprising

a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with and optionally with adjustable lateral limit stops and adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein one or more

punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

characterized by a measuring device (24) for determining the thickness of the stack of sheets to be bound as well as an adjusting device (116) coupled with the measuring device (24) for displaying the selected binder spine size according to the measurement of the measured sheet stack thickness.

49. A punching and binding machine according to Claim 42, wherein the measuring device (24) includes a measuring chamber (22) for receiving the stack of sheets to be bound as well a measuring means (108, 110) engaging in the measuring chamber (22) and coupled with the adjusting device for the border limit stop (114) and/or the depth limit stop (118) and/or with the display device (116).
50. A punching and binding machine according to Claim 49, wherein the measuring chamber (22) includes a floor (104) for setting up one of the edges of the stack of sheets as well as a contact surface (106) projecting upwardly from the floor for the back broad side of the stack of sheets, and that the measuring means (108, 110) includes an arm for

striking against the front broad side of the stack of sheets.

51. A punching and binding machine according to Claim 50, wherein the measuring means (108, 110) is rotatable about an axis parallel to the contact surface (106) and extends with its arm into the measuring chamber (22).
52. A punching and binding machine according to Claim 50, wherein the floor (104) of the measuring chamber (22) exhibits multiple steps (118) preferably stepping down towards the contact surface (106).
53. A punching and binding machine according to Claim 52, wherein the breadth of the steps (118) is smaller than the width of the insertion gap (12) of the punching mechanism (10).
54. A punching and binding machine according to Claim 30, wherein one or both spreader bodies (36) is limitedly moveable relative to the other spreader body (38) by means of an operating means (34) in the form of a ram or pusher.
55. A punching and binding machine according to Claim 54, wherein one of the two spreader bodies (36) is straight and the other comprises angle-forming bent spreader elements.
56. A punching and binding machine according to Claim 55, wherein the spreader body (36) with the straight spreader elements is slideable.

57. A punching and binding machine for a stack of sheets, comprising

a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with and optionally with adjustable lateral limit stops and adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

said machine further including a punch magazine (20) for receiving respectively one stack of sheets to be bound, which includes a floor (104) for setting up one of the edges of the stack as well as a contact surface (106) projecting at an incline upwards from the floor for one of the broad side surfaces of the stack of sheets, wherein the floor exhibits multiple steps descending towards the inclined contact surface (106).

58. A punching and binding machine according to claim 57, wherein the breadth of the steps (118) is smaller than the

U.S. Application No.: NEW  
PRELIMINARY AMENDMENT

Attorney Docket: 3827.095

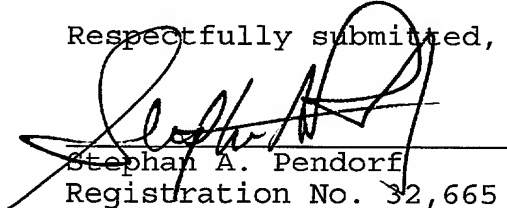
width of the insertion gap (12) of the punching mechanism  
(10).

REMARKS

The claims have been amended to eliminate multiple dependent claims and claims improperly depending from multiple dependent claims, and to otherwise conform the claims to U.S. practice. Care has been taken to ensure that no new matter is added to the text.

Entry and favorable consideration prior to consideration are respectfully requested.

Respectfully submitted,



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Date: March 22, 2002

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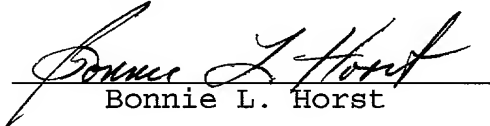
EXPRESS MAIL CERTIFICATE

"EXPRESS MAIL" MAILING LABEL NUMBER: EL568147802US

DATE OF DEPOSIT: March 22, 2002

I HEREBY CERTIFY that the foregoing Preliminary Amendment is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated and is addressed: ATTN: BOX PCT, Commissioner of Patents and Trademarks, Washington, D.C. 20231.

The Commissioner is hereby authorized to charge any additional fees which may be required at any time during the prosecution of this application without specific authorization, or credit any overpayment, to Deposit Account Number 16-0877.

  
Bonnie L. Horst

20020322 09:23:00

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The Examiner is requested to accept the marked-up version as it is based on the previous version, which when modified as below, produces the clean version submitted with the current amendment.

Please amend the claims as follows:

Please delete original Claims 1-29.

Please add the following new Claims 30-58:

--30. A punching and binding machine for a stack of sheets, comprising

a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with adjustable lateral limit stops and optionally with adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

further comprising an adjustment means (76, 78) for simultaneously operating an adjustment mechanism (68, 70, 72, 74) for the lateral limit stop (66) and a coupling mechanism (88, 92, 94, 96, 98, 100) for the selectable blades (54).

31. A punching and binding machine according to Claim 30, wherein the adjustment means (76, 78) includes multiple adjustment positions, optionally defined by a scale (103) and/or detent positions, with predetermined association of the lateral limit stop (66) and the coupling/decoupling condition of the selectable blades (54).
32. A punching and binding machine according to Claim 30, wherein the adjusting mechanism for the lateral limit stop (66) includes a ram (68) slideable in the longitudinal direction of the insertion gap (12) and carrying on one end the lateral limit stop (66), and adjustable via the adjustment means (76, 78).
33. A punching and binding machine according to Claim 32, wherein the adjustment means is a rotation knob (76) coupled with a curve wheel (74), which exhibits an adjustment curve (72) for receiving a slide-block (70) fixed to the ram.
34. A punching and binding machine according to Claim 31, wherein the adjustment means (76, 78) includes a calibration or adjusting element (78) for the fine adjustment of the lateral limit stop (66) in any adjustment position.

35. A punching and binding machine according to Claim 34, wherein the curve wheel (74) is connected with the rotation knob (76) fixed against rotation and axially displaceable, and that the calibration means (78) is limitedly rotatable relative to the rotation knob and engages via a slide-block (74) in a preferably screw shaped fine adjustment curve (76) of the curve wheel (74).
36. A punching and binding machine according to Claim 35, wherein the curve wheel (74) includes at least two, preferably three, equal, angularly spaced apart from each other, fine adjustment curves (86) for receiving a corresponding number of slide-blocks (84) provided on the adjustment means (78) in angular separation from each other.
37. A punching and binding machine according to Claim 30, wherein the coupling mechanism for the selectable blades (54) includes a camshaft (88) coupled fixed against rotation with the adjusting means in the form of the rotation knob (76) with respectively one cam curve associated with each of the individual selectable blades (54) as well as respectively one locking means (96) radially adjustable via the associated cam curve (92).
38. A punching and binding machine according to Claim 37, wherein the punching blades (46) inclusive of the selectable blades (54) are provided on a blade shaft (28) concentric to the camshaft (88) and respectively exhibit one punch part spaced radially apart from the outer surface of the blade shaft (28) and curved coaxially thereto, so that by rotation

of the blade shaft (28) the punch operation can be carried out.

39. A punching and binding machine according to Claim 38, wherein the selectable blades (54) and the blade shaft (28) are axially not displaceable relative to each other and are rotatable relative to each other about a common rotation axis (54) and that the locking means (96) extends through a radial through hole (94) in the blade shaft (28), wherein in the locking position the locking means engages under the influence of the cam curve (92) in a radial borehole (100) of the selectable blade (54), which borehole is opened radially inwardly towards the blade shaft (28), and in the disengaged position is extracted from the radial borehole (100) of the selectable blade in the direction of the blade shaft (28).
40. A punching and binding machine according to Claim 39, wherein the locking means (96) is urged in the direction of the camshaft (88) by the influence of a spring (98) supported in the selectable blade (54).
41. A punching and binding machine according to Claim 38, wherein the blade shaft (28) is connected fixed against rotation with an operating lever (30).
42. A punching and binding machine according to Claim 38, wherein the blade shaft (28) is motor driven.
43. A punching and binding machine according to Claim 30, further including a measuring device (26) for determining

the thickness of the stack of sheets to be bound as well as with a device coupled to the measuring device (24) for adjusting the border limit stops (34) of the binding mechanism (16) depending upon the dimensions of the measured sheet stack thickness.

44. A punching and binding machine for a stack of sheets, comprising

a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with and optionally with adjustable lateral limit stops and adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

further comprising a measuring device (26) for determining the thickness of the stack of sheets to be bound as well as with a device coupled to the measuring device (24) for adjusting the border limit stops (34) of the

binding mechanism (16) depending upon the dimensions of the measured sheet stack thickness.

45. A punching and binding machine according to Claim 43, further including a device coupled with the measuring device for adjusting the depth limit stop (112) in the insertion gap (12) of the punching mechanism (10) according to the dimension of the measured sheet stack thickness.

46. A punching and binding machine for a stack of sheets, comprising

a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with and optionally with adjustable lateral limit stops and adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

and further comprising a measuring device (26) for determining the thickness of the stack of sheets to be bound

as well as with a device coupled to the measuring device (24) for adjusting the border limit stops (34) of the binding mechanism (16) depending upon the dimensions of the measured sheet stack thickness.

47. A punching and binding machine according to Claim 42, wherein an adjusting device (116) coupled with the measuring device (24) for displaying the selected binder spine size according to the measurement of the measured sheet stack thickness.

48. A punching and binding machine for a stack of sheets, comprising

a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with and optionally with adjustable lateral limit stops and adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

characterized by a measuring device (24) for determining the thickness of the stack of sheets to be bound as well as an adjusting device (116) coupled with the measuring device (24) for displaying the selected binder spine size according to the measurement of the measured sheet stack thickness.

49. A punching and binding machine according to Claim 42, wherein the measuring device (24) includes a measuring chamber (22) for receiving the stack of sheets to be bound as well as a measuring means (108, 110) engaging in the measuring chamber (22) and coupled with the adjusting device for the border limit stop (114) and/or the depth limit stop (118) and/or with the display device (116).
50. A punching and binding machine according to Claim 49, wherein the measuring chamber (22) includes a floor (104) for setting up one of the edges of the stack of sheets as well as a contact surface (106) projecting upwardly from the floor for the back broad side of the stack of sheets, and that the measuring means (108, 110) includes an arm for striking against the front broad side of the stack of sheets.
51. A punching and binding machine according to Claim 50, wherein the measuring means (108, 110) is rotatable about an axis parallel to the contact surface (106) and extends with its arm into the measuring chamber (22).
52. A punching and binding machine according to Claim 50, wherein the floor (104) of the measuring chamber (22)

exhibits multiple steps (118) preferably stepping down towards the contact surface (106).

53. A punching and binding machine according to Claim 52, wherein the breadth of the steps (118) is smaller than the width of the insertion gap (12) of the punching mechanism (10).
54. A punching and binding machine according to Claim 30, wherein one or both spreader bodies (36) is limitedly moveable relative to the other spreader body (38) by means of an operating means (34) in the form of a ram or pusher.
55. A punching and binding machine according to Claim 54, wherein one of the two spreader bodies (36) is straight and the other comprises angle-forming bent spreader elements.
56. A punching and binding machine according to Claim 55, wherein the spreader body (36) with the straight spreader elements is slideable.
57. A punching and binding machine for a stack of sheets, comprising  
a punching mechanism which includes an insertion gap limited on one side by a punch matrix, with and optionally with adjustable lateral limit stops and adjustable depth stop, for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through

the insertion gap and the punch matrix, wherein one or more punch blades are selectable blades which can be decoupled from the remaining punch blades, and

a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and optionally limited in motion by an adjustable limit stop,

said machine further including a punch magazine (20) for receiving respectively one stack of sheets to be bound, which includes a floor (104) for setting up one of the edges of the stack as well as a contact surface (106) projecting at an incline upwards from the floor for one of the broad side surfaces of the stack of sheets, wherein the floor exhibits multiple steps descending towards the inclined contact surface (106).

58. A punching and binding machine according to claim 57, wherein the breadth of the steps (118) is smaller than the width of the insertion gap (12) of the punching mechanism (10).--